Amendments to the Specification:

Please make the following changes per the Examiner's rejections for informalities:

Please amend the paragraph starting on page 3, line 21 as follows:

"The present invention is of an optical enhancing material comprising a medium, the medium comprising a semicontinuous metal film of randomly distributed metal particles and their clusters at approximately their percolation threshold. In the preferred embodiment, the metal comprises at least one metal selected from silver, gold, copper, platinum, nickel, and aluminum. The metal particles have an average width between approximately 1 and 1000 nanometers. The metal particles and their clusters have lengths varying from the widths of individual metal particles to a lateral size of the metal film. The semicontinuous metal film has an average thickness between approximately 1 and 100 nanometers. The semicontinuous metal film has a metal-filling factor p over a range between $p_c - (\varepsilon_{\text{dielectric}} / |\varepsilon_{\text{metal}}|)^{0.36}$ and $p_c + (\varepsilon_{\text{dielectric}} / |\varepsilon_{\text{metal}}|)^{0.36}$, where p_c is a metal-filling factor at the percolation threshold, $\varepsilon_{\text{dielectric}}$ is a dielectric function, permittivity, of a dielectric component of the semicontinuous metal film, and $\varepsilon_{\text{metal}}$ is a dielectric function, permittivity, of a metal component of the semicontinuous metal film. The semicontinuous metal film is manufactured via at least <u>one</u> technique from ion exchange, thermal evaporation, pulsed laser deposition, laser ablation, electron-beam deposition, ion-beam deposition, sputtering, radio-frequency glow discharge, and lithography. The material provides optical enhancement at light wavelengths between approximately 10 and 100,000 nanometers, most preferably between approximately 200 and 20,000 nanometers. An analyte may be placed proximate the medium, such as at least one of the following: atoms, molecules, nanocrystals, nanoparticles, and biological materials. The analyte can be chiral. A non-reactive surface coating may be placed over the analyte, the medium, or both. The material may additionally comprise a microcavity / microresonator made of one or more materials selected from dielectric and semiconductor materials. The microcavity may be a sphere, a

deformed sphere, a spheroid, a rod, or a tube. The microcavity may be a semiconductor laser cavity. The medium may be located at one or more surfaces of the microcavity (inner and/or outer surfaces). The medium may be an integrated component of the microcavity."

Please amend the paragraph starting on page 16, line 16 as follows:

"For example, Fig. 3 shows an optical sensor according to the invention which employs a semicontinuous metal film. The sensor preferably comprises a medium **10** comprising a ~~semincontinuous~~ semicontinuous metal film of randomly distributed metal particles and their clusters, a light source **12**, one or more detectors **14** located at the same side of the medium as the light source, and an additional layer **18** for structural support and other purposes. The sensor optionally comprises one or more detectors **16** located at the opposite side of the medium from the light source."

Please amend the paragraph starting on page 23, line 7 as follows:

"Semicontinuous metal films or semicontinuous-metal-film/microcavity composites can be used for microlasers. In order to achieve directional emission, a microcavity of a cylinder of deformed circular or bow-tie cross section allows laser emission in narrow angles. Another possibility is incorporation of semicontinuous metal films into semiconductor lasers, including the traditional semiconductor lasers and the recently developing Vertical Cavity Surface Emitting Lasers (VCSELs) in order to shift laser output wavelength and achieve laser output at multiple wavelengths. The advantages of microlasers with semicontinuous metal films or semicontinuous-metal-film/microcavity composites, which provide field enhancement, include lower pumping power, smaller sizes, and lower weights than other designs. Another important property of semicontinuous metal films that is important for their ~~using~~ use for developing novel microlasers is their very broad amplification band, from the near ultra-violet to the far infrared."

Please amend the paragraph starting on page 26, line 12 as follows:

"Enhancement of photochemistry and photobiology can be even greater when a semicontinuous metal film is deposited on the internal surface of a highly porous dielectric matrix. An example of such matrix material is zeolites, which typically have ~~porous~~ pores of sizes from 10 to 100,000 nm, so that the effective internal surface can be as large as 10 m^2 for a zeolite of volume of 1 cm^3. The semicontinuous metal film can be deposited on the internal surface of a zeolite by various methods of chemical deposition, e.g., ion exchange method is used for this purpose. V. Petranovskii, et al., *Complex Mediums II: Beyond Linear Isotropic Dielectrics,* SPIE Proc. 4467, p. 377 (2001). Semicontinuous metal films on the internal surface of highly porous dielectric matrix enhance photochemistry and photobiology reactions of gaseous and liquid reagents located in the ~~porous~~ pores of the matrix."

Please amend the paragraph starting on page 26, line 22 as follows:

"Figs. 11 and 12 illustrate photochemical and photobiological enhanced devices employing a ~~semincontinuous~~ semicontinuous film according to the invention, respectively. The devices preferably comprise a medium **10** comprising a semicontinuous metal film of randomly distributed metal particles and their clusters, an additional layer **18** for structural support and other purposes, and a photochemical agent **72** or a photobiological agent **82**."

Please amend the paragraph starting on page 27, line 20 as follows:

"Fig. 13 illustrates a sub-femtosecond pulse generation device employing a semicontinuous metal film according to the invention. The device preferably comprises a medium **10** comprising a semicontinuous metal film of randomly distributed metal particles and their clusters, a light source **92** selected from the group of femtosecond pulses and white-light, an additional layer **18** for structural support and other purposes, and one or more near-field detectors **24** located on the same side of the medium as the light source. The device optionally comprises one or more near-field detectors **26** located on the opposite side of the medium from the light source."